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Reactions of heteroaromatic chromophores with lanthanide complexes of p-sulfonatothiacalix[4]arene

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Abstract

The conditions for the formation of heteroleptic complexes of a lanthanide(iii) ion (Ln = La, Gd, and Tb) with p-sulfonatothiacalix[4]arene and a heteroaromatic chromophore in water were found using X-ray diffraction analysis, pH-metry, 1H NMR and UV-Vis spectroscopy, and nuclear magnetic relaxation. In the resulting complexes, the heteroaromatic chromophore is in the calix[4]arene cavity and the lanthanide ion is coordinated by the electron-donating groups of the upper or lower calix[4]arene rim. Emission spectroscopic studies revealed changed emission properties of TbIII ions in the terbium(iii)-p-sulfonatothiacalix[4]arene-bipy complex. © 2008 Springer Science+Business Media, Inc.

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Keywords

Chromozphores, Heteroleptic complexes, Lanthanides, Nitrogen-containing organic compounds, P-sulfonatothiacalix[4]arene